

6. GROUND WATER ALGORITHMS

The horizontal flow of pollutants in the saturated zone (ground water) is not expected to be a significant pathway when considering air pollutants. Transport has been simulated because it is a more significant process than diffusion/dispersion. In the prototype, ground water is modeled as a receiving cell from the vadose zone and a sending cell to surface water. The transfer factors for soil to ground water and for ground water to surface water are based on the aqueous phase advection only by substituting recharge for flow velocity:

$$T_{soil-groundwater} = \frac{A_{soil\ groundwater}}{V_{soil}} \frac{Z_{water}}{Z_{total}} Recharge \quad (6-1)$$

and

$$T_{groundwater-surfacewater} = \frac{A_{groundwater\ surfacewater}}{V_{groundwater}} \frac{Z_{water}}{Z_{total}} Recharge \quad (6-2)$$

where:

A	=	cross section area between cells (m ²)
V	=	volume of cell (m ³)
$Recharge$	=	annual recharge into ground water (m/h).

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